UNIVERSITY OF HAWAII
LIBRARY

Digitized by the Internet Archive
in 2026

https://archive.org/details/experimental-cell-research_1966_41_contents

EXPERIMENTAL CELL RESEARCH

VOLUME 41 · 1966

EXPERIMENTAL CELL RESEARCH

Published under the auspices of

THE INTERNATIONAL SOCIETY FOR CELL BIOLOGY

EXECUTIVE EDITORS:

T. CASPERSSON · T. GUSTAFSON · D. MAZIA

EDITORS:

H. BAUER · J. BRACHET · M. CHÈVREMONT · A. ENGSTRÖM

E. FAURÉ-FREMIET · G. FOLEY · G. KLEIN · O. LINDBERG · G. MONTALENTI

A. MOSCONA · J. PAUL · SIR JOHN RANDALL · J. RUNNSTRÖM

F. O. SCHMITT · C. H. WADDINGTON · R. W. G. WYCKOFF

VOLUME 41 · 1966

ACADEMIC PRESS, New York and London

COPYRIGHT, © 1966, BY ACADEMIC PRESS INC.

All Rights Reserved

No part of this book may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

Printed in Sweden

Almqvist & Wiksells

BOKTRYCKERI AB

UPPSALA 1966

66 56317

TABLE OF CONTENTS

NUMBER 1, JANUARY 1966

RONDANELLI, E. G., TRENTA, A., MAGLIULO, E., VANNINI, V. and GERNA, G., Giant cells produced by mitotic reversion in prophase, metaphase, anaphase after low doses of X-rays 1
HOLM, B., Variation in the deoxyribonuclease activity in synchronously growing and dividing mass cultures of *Tetrahymena pyriformis* Gl. 12
SINCLAIR, R., Steady-state suspension culture and metabolism of strain L mouse cells in simple defined medium 20
MERRIAM, R. W., The role of cytoplasmic membranes in the regulation of water concentration within frog oocytes 34
WHITFIELD, J. F., BROHÉE, H. and YOUDALE, T., Mitotic stimulation in normal and irradiated suspension cultures of rat bone marrow by an elevated salt concentration 49
WOODARD, J., WOODARD, M., GELBER, B. and SWIFT, H., Cytochemical studies of conjugation in *Paramecium aurelia* 55
KROEGER, H., Potentialdifferenz und Puff-Muster. Elektrophysiologische und cytologische Untersuchungen an den Speicheldrüsen von *Chironomus thummi* 64
NARAYAN, K. S., MURAMATSU, M., SMETANA, K. and BUSCH, H., Ultrastructural studies on RNA and DNA components of isolated nucleoli of Walker 256 carcinosarcoma 81
BAHR, G. F., HERBENER, G. H. and GLAS, U., A method for the counting of mitochondria . . 99
GALLIEN-LARTIGUE, O., Action du facteur érythropoiétique du plasma sur l'hémopoièse *in vitro* du foie de souris embryonnaire 109
v. HOFSTEN, B., Partition of *Escherichia coli* in an aqueous polymer two-phase system 117
BAMMI, R. K. and JURA, P., Effects of phenethyl alcohol on chromosomes of *Allium cepa* . . . 124
MUELLER, J. A., Resistance of kappa-bearing paramecia to kappa toxin 131
RUBIN, H., A substance in conditioned medium which enhances the growth of small numbers of chick embryo cells 138
RUBIN, H., The inhibition of chick embryo cell growth by medium obtained from cultures of Rous sarcoma cells 149
BRADLEY, D. E., The ultrastructure of the flagella of three chrysomonads with particular reference to the mastigonemes. 162
REYNOLDS, J. J., The effect of hydrocortisone on the growth of chick bone rudiments in chemically defined medium 174
LITTLEFIELD, J. W., The use of drug-resistant markers to study the hybridization of mouse fibroblasts 190
CHIAKULAS, J. J., SCHEVING, L. E. and WINSTON, S., The effects of exogenous epinephrine and environmental stress stimuli on the mitotic rates of larval urodele tissues 197

PRELIMINARY NOTES

GRIM, J. N., Isolated ciliary structures of *Euplotes patella* 206
RIBAS-MUNDÓ, M., Nucleolar DNA synthesis in leukocytes cultured *in vitro* 210
THERKELSEN, A. J. and LAMM, L. U., Difference in the frequency of sex chromatin positive cells in DNA-synthetising and nonsynthetising human cells in tissue cultures 215
RADLEY, J. M., DNA content of individual chromosomes of *Protemnodon bicolor* 217
MIYOSHI, I., IRINO, S. and HIRAKI, K., Fibroblast-like transformation of human bone marrow fat cells *in vitro* 220
KOHEN, E., LEGALLAIS, V. and KOHEN, C., An introduction to microelectrophoresis and microinjection techniques in microfluorimetry 223

NUMBER 2, FEBRUARY 1966

MATTISSON, A. G. M. and BEECHEY, R. B., Some studies on cellular fractions of the adductor muscle of *Pecten maximus* 227
LEVIER, R. R. and SPAZIANI, E., The effects of estradiol on the occurrence of mast cells in the rat uterus 244
HILL, M., Extranuclear localization of newly synthesized DNA in lymphocytes due to cell damage 253
KEVIN, S. P., WITKUS, E. R. and BERGER, C. A., Effects of kinetin on cell division in *Triturus viridescens* 259
HUDSON, G., Eosinophil granules and phosphotungstic acid: An electron microscope study of guinea-pig bone marrow 265
VAN'T HOF, J., Comparative cell population kinetics of tritiated thymidine labeled diploid and colchicine-induced tetraploid cells in the same tissue of pisum 274
LINDSTRÖM, B. and PHILIPSON, B., Cytochemical analysis of lead by X-ray absorption spectrophotometry 289
JOHNSON, B. F. and GIBSON, E. J., Autoradiographic analysis of regional cell wall growth of yeasts. II. *Pichia farinosa* 297
BERNSTEIN, E. O., Physiology of an obligate photoautotroph (*Chlamydomonas moewusii*). II. The effect of light-dark cycles on cell division 307
POLET, H., The effect of hydrocortisone on the membranes of primary human amnion cells *in vitro* 316
RIJVEN, A. H. G. C. and WARDLAW, I. F., A method for the determination of cell number in plant tissues 324
TANDLER, C. J. and LA TORRE, J. L., Differential incorporation of 5'-tritiated pyrimidines into nucleolar RNA of developing root tip cells 329
ORENGO, A., Feed back regulation in the ribopyrimidine "salvage" pathway 338
MURRELL, L. R., Mammalian pancreatic islet tissue in organ culture. I. Methods of culture and *in vitro* histogenesis 350
MURRELL, L. R., MORGAN, C. R. and LAZAROW, A., Mammalian pancreatic islet tissue in organ culture. II. Insulin contents of tissues and culture medium 365
CARLSON, L. and GLEDHILL, B. L., Studies on the dry mass of bull spermatozoal heads. Comparative measurements using soft X-ray microradiography and microinterferometry 376
WOLPERT, L., The mechanical properties of the membrane of the sea urchin egg during cleavage 385
ROSENBERG, H., The isolation and identification of "volutin" granules from *Tetrahymena* . . . 397
THOMSON, J. L. and BIGGERS, J. D., Effect of inhibitors of protein synthesis on the development of preimplantation mouse embryos 411
GALAVAZI, G., SCHENK, H. and BOOTSMA, D., Synchronization of mammalian cells *in vitro* by inhibition of the DNA synthesis. I. Optimal conditions 428
GALAVAZI, G. and BOOTSMA, D., Synchronization of mammalian cells *in vitro* by inhibition of the DNA synthesis. II. Population dynamics 438

PRELIMINARY NOTES

CROES, A. F., Duplication of DNA during meiosis in baker's yeast. 452
VAN'T HOF, J., Autoradiographic evidence for a difference in ^{3}H-thymidine incorporation between intact and cultured roots of pisum 455
JAGIELLO, G. and OHNO, S., Isopycnotic behavior of the X-univalent in the X0 mouse ovum 459
RASMUSSEN, L. and ZEUTHEN, E., Cell division in *Tetrahymena* adapting to *p*-DL-fluorophenylalanine 462

NUMBER 3, MARCH 1966

ISAKA, S., Separation of the fertilization membrane in urechis and sea urchin eggs as a phenomenon caused by breakage of hydrogen bonds. IV. Denaturing action of proteolytic enzymes 467
BLADE, E., HAREL, L. and HANANIA, N., Variation du taux d'incorporation du phosphore dans des cellules en fonction de leurs concentrations et inhibition de contact 473
NORRBY, E., LEVAN, A. and NICHOLS, W. W., The correlation between the chromosome pulverization effect and other biological activities of measles virus preparations 483
STEVENS, D. F., Mechanisms influencing cytokinesis in hamster ascites multinucleated cells. The effect of some citrate cycle inhibitors and nucleotides 492
DICKSON, J. A. and LESLIE, I., The composition and metabolism of cells cultured in a modified filter-well apparatus 502
GRAEBE, J. E. and NOVELLI, G. D., A practical method for large-scale plant tissue culture 509
GRAEBE, J. E. and NOVELLI, G. D., Amino acid incorporation in a cell-free system from submerged tissue cultures of *Zea mays* L. 521
DE VINCENTIIS, M., HÖRSTADIUS, S. and RUNNSTRÖM, J., Studies on controlled and released respiration in animal and vegetal halves of the embryo of the sea urchin, *Paracentrotus lividus* 535
LANDUREAU, J. C., Cultures *in vitro* de cellules embryonnaires de blattes (*insectes dictyoptères*) 545
ADA, G. L., HUMPHREY, J. H., ASKONAS, B. A., MCDEVITT, H. O. and NOSSAL, G. J. V., Correlation of grain counts with radioactivity (^{125}I and tritium) in autoradiography 557
BARKA, T., Stimulation of RNA synthesis in the salivary gland by isoproterenol 573
JOHNSON, B. F. and GIBSON, E., Autoradiographic analysis of regional cell wall growth of yeasts. III. *Saccharomyces cerevisiae* 580
KORNFELD, S. and GINSBURG, V., The metabolism of glucosamine by tissue culture cells . . . 592
WEISS, L. and KAPES, D. L., Observations on cell adhesion and separation following enzyme treatment 601
MCKENNA, J. M., LAZARUS, H. and FOLEY, G. E., Antigenic differences among sublines of the KB cell line 609
MERRIAM, R. W., Protein synthesis in mature frog oocytes 614
HADEK, R., Study on membrane elevation (blebbing) in the rabbit zygote 622
BJÖRNTORP, P., Antagonism of fatty acid effects on rat liver mitochondria by nuclear components 630
MALLETTE, J. M. and ANTHONY, A., Growth in culture of trypsin dissociated thyroid cells from adult rats 642
GLEDHILL, B. L., GLEDHILL, M. P., RIGLER, R., JR. and RINGERTZ, N. R., Changes in deoxyribonucleoprotein during spermiogenesis in the bull 652

PRELIMINARY NOTES

MARGRETH, A., NOVELLO, F. and ALOISI, M., Unbalanced synthesis of contractile and sarcoplasmic proteins in denervated frog muscle 666
METCALF, W. K. and OSMOND, D. G., A radioautographic investigation of the identity of phytohaemagglutinin responsive cells in the lymphoid tissues of the rat 669
LANGER, H. and THORELL, B., Microspectrophotometry of single rhabdomeres in the insect eye 673
COMINGS, D. E., Incorporation of tritium of ^{3}H-5-uridine into DNA 677
BISWAS, S. and BISWAS, B. B., The effect of ultraviolet irradiation on protein synthesis by chloroplast ribosomes 682
TEPLITZ, R. L., HANSSON, K. M., FOLEY, V. L. and TEPLITZ, M. R., A model for study of autoimmune disease and its relationship to karyokinesis and cytomorphology 686
SELJELID, R., On the origin of colloid droplets in thyroid follicle cells 688
WADDINGTON, C. H. and PERRY, M. M., A note on the mechanisms of cell deformation in the neural folds of the amphibia 691
WADDINGTON, C. H. and PERRY, M. M., Peri-nuclear structures in late anaphase in some amphibian mesenchyme cells 694
MOSCONA, A. A. and MOSCONA, M. H., Aggregation of embryonic cells in a serum-free medium and its inhibition at suboptimal temperatures 697
MOSCONA, M. H. and MOSCONA, A. A., Inhibition of cell aggregation *in vitro* by puromycin . 703